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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/255,892 02/23/99 BOICE

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EXAMINER

LM02/1210

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ART UNIT

PAPER NUMBER

2713

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/255,892

Applicant(s)

Boice et al.

Examiner

Shawn An

Group Art Unit

2713



☐ Responsive to communication(s) filed on _____.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-29 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-29 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

3. Claims 1-3, 12, 18-20, and 25 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sasaki et al (5,530,478).

Sasaki et al disclose an encoder comprising: storage for holding multiple sets of quantization matrix tables (Col. 15, lines 38-39); a quantizer (Fig. 17, 26) for quantizing video data using one set of quantization (Q) matrix tables of the multiple sets of Q matrix tables (Col. 15, Lines 27-39); and means for dynamically switching (Fig. 17, 210) the quantizer from using one set of the Q tables to using another set of Q matrix tables of the multiple sets of Q matrix tables (Col. 15, Lines 40-57) at a picture boundary of the sequence of video data (Col. 15, lines 27-30) as specified in claims 1-2 and 18-19.

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Regarding claims 3, 12, 20, and 25, Sasaki discloses that during encode and decode the CPU loads the tables as required (Col. 13, lines 30-31), which clearly anticipates switching one set of Q matrix tables to another set of Q matrix tables without delaying encoding of video data or dynamically (real time) changing Q matrix tables as specified.

4. Claim 29 is rejected under 35 U.S.C. 102(e) as being clearly anticipated by Wheeler et al (5,825,680).

Wheeler et al disclose a computer product (Fig. 1) comprising a medium having program means for use in encoding a sequence of video data comprising: computer program means (CPU) for storing multiple sets of quantization matrix tables (Col. 13, lines 28-32); computer program means for quantizing video data using one set of quantization (Q) matrix tables of the multiple sets of Q matrix tables (Col. 13, Lines 18-32); and computer program means for dynamically switching the quantizing from using one set of the Q tables to using another set of Q matrix tables of the multiple sets of Q matrix tables (Col. 15, Lines 28-32) as specified in claim 29.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (5,530,478) in view of Wheeler et al (5,825,680).

Sasaki et al do not particularly disclose having a tables set register within the quantizer. However, Wheeler discloses the use of conventional table set register (Fig. 7, 692) to control switching of the quantizer. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Sasaki to include a conventional table set register as taught by Wheeler so as to control switching of the quantizer as specified.

7. Claims 5-6, 9, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (5,530,478).

Sasaki et al discloses default quantization matrix table (Fig. 17, 201). Since Sasaki's reference discloses a default quantization matrix table, it is considered quite obvious to have a multiple tables of the one set of default quantization matrix tables in order to selectively utilize each default quantization matrix table. It is considered quite obvious if not inherent for a default quantization matrix table pursuant to conventionally well known MPEG standard to be in conformance with such MPEG standard.

8. Claims 7-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (5,530,478) in view of Rick et al (5,987,179).

Sasaki et al do not particularly disclose Q tables comprising user's custom quantization matrix tables. However, Rick et al disclose the use of conventional custom quantization matrix tables (Col. 5, lines 36-38) to insure the desired level of image quality as specified in claims 7-8 and 22. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Sasaki to include a conventional custom quantization matrix tables as taught by Rick et al so that at least one table or multiple tables of the set of Q matrix

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tables comprise custom quantization matrix tables to insure the desired level of image quality as specified.

9. Claims 10-11 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (5,530,478) in view of Katayama (5,422,736) and Wheeler et al (5,825,680).

Sasaki et al do not particularly disclose quantization matrix tables comprising an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table. However, Katayama discloses the use of conventional quantization matrix tables comprising luminance and chrominance (Col. 5, lines 34-49) and Wheeler et al disclose the use of quantization matrix tables comprising an intra table and a non-intra table (Fig. 7, 690) as specified in claims 10-11 and 23-24. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an encoder as taught by Sasaki to include a conventional quantization matrix tables comprising luminance and chrominance as taught by Katayama and also include the quantization matrix tables comprising an intra table and a non-intra table so that the quantization matrix tables comprises an intra luminance table, a non-intra luminance table, an intra chrominance table, and a non-intra chrominance table to manipulate the desired level of image quality as specified.

10. Claims 13-17 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al (5,530,478) in view of Hosono (5,796,438).

Sasaki et al do not particularly disclose a compressed store interface for outputting a compressed bitstream dynamically outputting a Q matrix extension start code in a compressed bitstream. However, Hosono discloses a compressed store interface for outputting a compressed bitstream dynamically outputting a Q matrix extension start code in a compressed bitstream (Column 10, lines 1-38) in order to access multiple sets of Q matrix tables as specified in claims 13 and 26. Therefore, it would have been obvious to a person of ordinary skill in the relevant art

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employing an encoder as taught by Sasaki to include a teaching of compressed store interface for outputting a compressed bitstream dynamically outputting a Q matrix extension start code as taught by Hosono in order to access multiple sets of Q matrix tables as specified.

Regarding claims 14-17 and 27-28, Sasaki discloses that during encode and decode, the CPU loads the tables as required (Col. 13, lines 30-31), which clearly anticipates switching one set of Q matrix tables to another set of Q matrix tables without delaying or pausing encoding of video data or dynamically (real time) changing Q matrix tables as specified.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.


- A) Pennebaker (5,157,488), Adaptive quantization within the JPEG sequential mode.
- B) Greenfield et al (5,526,054), Apparatus for header generation.
- C) Matsumura et al (5,847,763), Moving picture transmission system.
- D) Siracusa (5,483,287), Method for forming transport cells for conveying compressed video data.
- E) Chida (5,781,248), Multipoint receiving and data processing apparatus.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number is (703) 305-0099.



ssa

December 7, 1999


CHRISTOPHER S. KELLEY
PRIMARY EXAMINER